

What is claimed is:

1. A glass composition comprising:
- not smaller than 65wt.% and smaller than 74wt.%  $\text{SiO}_2$ ;
  - 0-5 wt.%  $\text{B}_2\text{O}_3$ ;
  - 0.1-2.5 wt.%  $\text{Al}_2\text{O}_3$ ;
  - not smaller than 0 wt.% and smaller than 2 wt.%  $\text{MgO}$ ;
  - 5-15 wt.%  $\text{CaO}$ ;
  - 0-10 wt.%  $\text{SrO}$ ;
  - 0-10 wt.%  $\text{BaO}$  wherein a total amount of  $\text{MgO}$ ,  $\text{CaO}$ ,  $\text{SrO}$ , and  $\text{BaO}$  is greater than 10 wt. % and not greater than 15 wt.%;
  - 0-5 wt.%  $\text{Li}_2\text{O}$ ;
  - 10-18 wt.%  $\text{Na}_2\text{O}$ ;
  - 0-5 wt.%  $\text{K}_2\text{O}$  wherein a total amount of  $\text{Li}_2\text{O}$ ,  $\text{Na}_2\text{O}$  and  $\text{K}_2\text{O}$  is 10-20 wt.%; and
  - 0-0.40 wt.%  $\text{TiO}_2$ .
2. A glass composition as claimed in claim 1, wherein the glass composition comprises:
- 65-70 wt.%  $\text{SiO}_2$ ;
  - not smaller than 0 wt.% and smaller than 2 wt.%  $\text{B}_2\text{O}_3$ , and
  - $\text{MgO}$ ,  $\text{CaO}$ ,  $\text{SrO}$  and  $\text{BaO}$  in a total amount of not smaller than 10 wt.% and smaller than 12 wt.%.
3. A glass composition as claimed in claim 1 or 2, wherein a total iron oxide ( $\text{T-Fe}_2\text{O}_3$ ) expressed as  $\text{Fe}_2\text{O}_3$  is 0.4-1.9 wt.% and,

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the glass composition with a thickness from 1 to 6 mm has a solar energy transmittance of not greater than 60% and ultraviolet transmittance of not greater than 30% defined by ISO.

4. A glass composition as claimed in any one of claims 1 thorough 3, wherein the glass composition comprises 0.4-1 wt.% total ion oxide (T-Fe<sub>2</sub>O<sub>3</sub>) expressed as Fe<sub>2</sub>O<sub>3</sub> and 0.01-0.40 wt.% TiO<sub>2</sub> and has a visible light transmittance of not smaller than 70% measured by the illuminant "A" with a thickness from 1 to 6mm.

5. A glass composition as claimed in any one of claims 1 thorough 4, wherein the glass composition comprises

0.4-0.65 wt.% total ion oxide (T-Fe<sub>2</sub>O<sub>3</sub>) expressed as Fe<sub>2</sub>O<sub>3</sub> wherein a FeO ration expressed as Fe<sub>2</sub>O<sub>3</sub> against the total ion oxide (T-Fe<sub>2</sub>O<sub>3</sub>) is 20-60 wt.%;

not smaller than 0.01wt.% and smaller than 0.20wt.% TiO<sub>2</sub>; and  
0.1-2.0 wt.% CeO<sub>2</sub>, and

wherein the glass composition with a thickness from 3.5 to 5.0 mm has the visible light transmittance of not smaller than 70 %, the solar energy transmittance of not greater than 55% and the ultraviolet transmittance of not greater than 15% defined by ISO when measured by using the illuminant "A".

6. A glass composition as claimed in any one of claims 1 thorough 4, wherein the glass composition comprises:

greater than 0.65wt.% and not greater than 0.90wt.% total ion oxide

(T-Fe<sub>2</sub>O<sub>3</sub>) expressed as Fe<sub>2</sub>O<sub>3</sub>;

0.01-0.40wt.% TiO<sub>2</sub>; and

greater than 1.4wt.% and not greater than 2.0wt.% CeO<sub>2</sub>,

a FeO ration expressed as Fe<sub>2</sub>O<sub>3</sub> against the total iron oxide (T-Fe<sub>2</sub>O<sub>3</sub>) is 20-60 wt.%, and

the glass composition with a thickness from 1.8 to 4.0 mm has the visible light transmittance of not smaller than 70 %, the solar energy transmittance of not greater than 55% and the ultraviolet transmittance of not greater than 15% defined by ISO when measured by using the illuminant "A".

7. A glass composition as claimed in any one of claims 1 thorough 6, wherein the glass composition comprises:

smaller than 0.005 wt.% CoO;

not greater than 0.01 wt.% NiO; and

not greater than 0.001 wt.% Se.

8.. A glass composition as claimed in any one of claims 1 thorough 3, wherein the glass composition comprises:

0.9-1.9 wt.% T-Fe<sub>2</sub>O<sub>3</sub>;

0.005-0.05 wt.% CoO;

0-0.2 wt.% NiO; and

0-0.005 wt.% Se.

9. A glass composition as claimed in claim 8, wherein the glass composition with a thickness from 1.8 to 5.0mm has the visible light

transmittance of 10-65%, the solar energy transmittance of not greater than 50% and the ultraviolet transmittance of not greater than 15% defined by ISO when measured by using the illuminant "A".

10. A glass composition as claimed in any one of claims 1 thorough 9, wherein the product of the mean linear expansion coefficient in a range of 50—350°C and Young's modulus is 0.71—0.90 MPa/°C.

11. A glass composition as claimed in any one of claims 1 thorough 10, wherein the mean linear expansion coefficient in a range of 50—350°C is  $80 \times 10^{-7} - 110 \times 10^{-7}/^{\circ}\text{C}$ .

12. A glass composition as claimed in any one of claims 1 thorough 11, wherein the density measured at an ambient temperature is greater than 2.47g/cm<sup>3</sup> and not greater than 2.65 g/cm<sup>3</sup>.

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